

However, three types of deposits in the park are exclusively Holocene in age: alluvial fans, various alluvium (units Qoal and Qal on the geologic map), and engineered fill. Alluvial fans are present at the mouths of nearly every small valley in the park where they mingle with stream deposits. The upstream portion of alluvial fans is gradational, interfingering with sheetwash and colluvial deposits that mantle valley margins. Other

alluvial deposits of Holocene age are found along stream channels show that most streams have been aggrading for the past 150 years or more, but the upper reaches have incised during this same period (Biek and Gonzalez 2001). Finally, some areas of engineered fill occur in the park: along U.S. Route 85 in the North Unit and along I-94 in the South Unit. These mappable units show that humans are agents of landscape change.

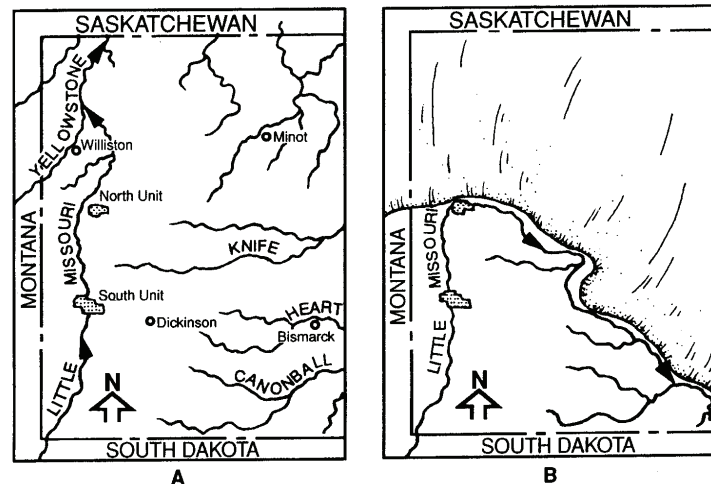


Figure 16. Pre- and Post-Glacial Drainages of North Dakota. A. Rivers flowed north into Canada and northeast to Hudson Bay before glaciers diverted them. B. Glacial diversion caused the rivers to change direction. Source: Murphy et al. (1999).